

CE HISTORY

AVIATION ENGINEERS IN THE WAR AGAINST JAPAN

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This summer marks the 50th Anniversary of the end of World War II. Previous articles in this publication have highlighted the Aviation Engineers' vital role in the war. World War II was an important lesson for the Army Air Forces, one that unfortunately took 20 years to learn. The lesson was that air power requires the support of engineers who are specially trained, equipped, and organized to fulfill that mission. The Aviation Engineers did that job as well as anyone. There is much to be learned from their experiences. In fact, much of Civil Engineering doctrine was derived from the insights of engineers during World War II. Many of the issues that confronted them more than 50 years ago are identical to the lessons relearned in Korea, Vietnam, and Saudi Arabia. This article reviews the activities of the Aviation Engineers in the Pacific Theater. Engineers were deployed to locations extending from Hawaii to India and Australia to China.

Aviation Engineers saw action quite early during the war in the Pacific. The 804th Aviation Engineer Company came under fire on 7 December 1941 when the Japanese attacked Hickam Field, Hawaii. The 803d Aviation Engineer Battalion had endured a five-month journey to the Philippines in 1941, arriving just weeks before the Japanese attacked. The men repaired airfields, scraped out emergency runways and performed whatever engineering work was required. They soon found themselves serving as infantry troops, turning back a Japanese suicide attack at one point. The Japanese captured two of the companies on Bataan, but Company A managed to reach Corregidor. There they worked to keep Kindley Field in operation, in the hope that additional aircraft would be coming. They never did. The remnants of company A were among the last Americans to surrender at Corregidor.

Facing an unexpected strategic situation in the theater, the engineers sought to strengthen the American presence in Hawaii and Australia. Before the war, Oahu possessed scarcely two bomber airfields. Within a year, the engineers had built 15 large bases, with revetments carved out of volcanic mountains, underground shops, miles of tunnels hewn in rock, tremendous aviation gas storage farms, and even a complete bomber runway nestled in a deep ravine for protection against enemy air action. In Australia, the engineers built seven dry weather fields near Darwin.

The challenge for Aviation Engineers in the Pacific were nearly insurmountable. Just building the bases in Hawaii and Australia to serve as springboards for any offensive action required special planning and logistical support to transport equipment and supplies thousands of miles. To carry the war to the Japanese required staggering logistical requirements. How were they to construct airfields in the heart of impenetrable jungles? How were hangars, shops, and tank farms to be rapidly erected on a coral atoll where every stick of building lumber and every bar of steel had to cross three thousand miles of water? How were pieces of heavy construction equipment to be off-loaded rapidly through pounding surf without harbors? How was water to be secured on a desert island where fresh water was nonexistent and attempts to dig wells were met by sea water at a depth of four feet? The engineers demonstrated their ingenuity by solving all of the above problems and many more just like them.



Engineers construct a control tower at a Pacific airfield.

RETURN TO THE PHILIPPINES

After completing facilities in Australia, the engineers moved north to Port Moresby, New Guinea. The problems encountered were far worse than any planner had anticipated before the war. Because the requirements were so overwhelming and the engineering forces so limited and equipment scarce, all engineering resources were pooled under Brig. Gen. Hugh J. Casey, who had accompanied General MacArthur from The Philippines. Thus Aviation Engineers, Army engineers, and sometimes even Seabees worked on whatever engineering projects had to be completed—runways, roads, and harbors. Although Maj. Gen. George C. Kenney, Commander, Allied Air Forces, complained bitterly, he could not persuade General MacArthur to change his mind. The requirement for two engineering organizations and logistical supply chan-

nels seemed a waste of resources. Engineers were a precious commodity, prompting General MacArthur to comment, “This is an engineer’s war.” The search for competent construction workers was demonstrated at one operational base undergoing expansion. General MacArthur asked the commander where he got all the carpenters who were busy erecting hangars, warehouses, and camp buildings. The officer replied, “We gave each of the men a hammer and some nails. Anyone who hit his thumb more than once out of five times trying to drive a nail was eliminated. The rest became carpenters.”

In preparation for General Douglas MacArthur’s return to the Philippines, Aviation Engineers constructed massive basing complexes at Port Moresby, New Guinea, to serve as a springboard for the move toward Japan. Beginning in 1943, engineers led the way by carving airfields in the jungles of New Guinea at Milne Bay, Finschhafen, Hollandia, and Morotai Island. Engineers had hoped to use captured Japanese airstrips, but these proved so inadequate it was hard to see how even the unpampered enemy could ever have used them. Airborne Aviation Engineers and their equipment arrived at Tsili Tsili by C-47 and upgraded an abandoned airstrip into an airfield for fighter aircraft in just days. At Tacloban, on the island of Leyte,



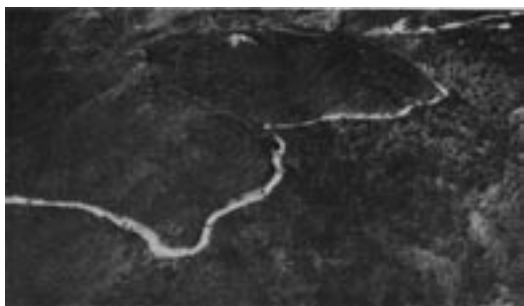
Frantic activity on a Tacloban airfield as engineers work side-by-side with aircraft.

Aviation Engineers built a 7,000-foot runway using pierced steel plank in spite of hundreds of land mines and aerial attacks, one night experiencing 71 separate passes by enemy aircraft. They continued building airfields, progressing toward Manila and the northern Philippines.

CHINA- BURMA- INDIA

In the China-Burma-India Theater, the activities of the Aviation Engineers were as far from normal as were most operations in that vast theater of opera-

tions. In China, only a handful of Aviation Engineers was available to advise Maj. Gen. Claire L. Chennault, Commander, 14th Air Force, on airfield construction. Hundreds of thousands of Chinese carried out the work, using whatever methods were available. Chinese men and women carried heavy loads of earth, stone, or other building materials in twin baskets slung from poles carried across their shoulders. Rollers were drawn by animals or singing teams of Chinese, often a hundred or more to each roller. The American principle of installing drainage first to protect the subgrade from the softening effect of standing water was often very difficult to apply. The Chinese engineers, in the habit of installing the drainage system last, would clinch the argument with the often heard and almost unanswerable reply that, "We have been doing it like this in China for two thousand years."



Military traffic travels the Ledo Road.

In India, the Tenth Air Force used fields prepared by native labor under British supervision. The 900th Aviation Engineer (Airborne) Battalion completed a noteworthy project in the jungles of Burma. The glider-borne troops constructed an airfield behind enemy lines at Myitkyina in support of Maj. Gen. Charles Wingate's



Hundreds of Chinese help build airfields using manual labor.

famous Chindits. From 1942 to 1944, five aviation engineer battalions, trained for airfield construction, worked on the Ledo Road that stretched from India to Burma to carry supplies on to China. Their fine work was finished only with the completion of the road, and, though some units then moved into China, they arrived too late to accomplish much before V-J Day.

PACIFIC OCEAN AREA

The island-hopping campaign across the Pacific was essentially a continuous struggle for air bases. Aviation Engineers and Seabees worked together, but often with a sense of competition, to provide the airfields on newly-captured islands. They constructed air bases on islands with names such as: Christmas, Ellis, Tarawa, and Kwajalein. American aircraft were flying missions from these new facilities often before the Japanese were even aware that construction was underway. These bases were critical because they practically eliminated the need for the vulnerable aircraft carriers to linger in enemy-infested waters and offered an opportunity for bombers to directly attack the Japanese homeland.

New aircraft entering the inventory presented tremendous challenges for Aviation Engineers. The airfields proposed for the Marianas (primarily Saipan, Tinian, and Guam) were of unprecedented scale in order to accept the giant B-29s. The bombers required smooth, finished runways of asphalt or concrete, each 8,500 by 200 feet. One airfield had 7 miles of runways and a 450,000 square foot warm-up apron. Five 800-man battalions worked around the



*Aviation Engineers
prepare an airfield on
Guam for B-29s.*

clock at Saipan, battling coral, bad weather, and 300 Japanese infantrymen brandishing axes and automatic weapons who attempted to overrun the site. Engineers also constructed airfields on Guam, while the Seabees built runways on Tinian. In all, these airfields hosted five B-29 wings, totaling some 720 aircraft. These included the Enola Gay and Bock's Car, aircraft used to drop the atomic bombs on Hiroshima and Nagasaki.

Army Air Force leaders planned a massive airfield construction effort on Okinawa to support an expected invasion of Japan. On V-J Day, 26 battalions were working on six airfields that included 25 miles of paved runways and parking aprons with enough concrete to build 40 miles of two-lane highway.

The Aviation Engineers' experience in the Pacific was quite different from the European work where engineers were under the direct control of Army Air Forces commanders and were used almost exclusively on airfield construction. Although this was not the case in the Pacific, the engineers still carried out their work in the face of untold obstacles, confusing lines of command and control, and conditions they had never anticipated. Their remarkable engineering feats—the Ledo Road, Port Moresby, Myitkyina, and countless other projects played a major role in winning the war in the Pacific and set the standard for other engineers to match in the future.